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lower and lower through this stratum, becoming more and more charged, and being for the most part stopped by the bed of earthy lignite, has there given birth to the large masses above mentioned. The stratum of earthy lignite being but a bad filter, the pyrites become very scarce beneath, and soon (at two to two and an half feet below it) disappears altogether.

ART. IV.—*Notices of the Geology, Mineralogy, Topography, Productions, and Aboriginal inhabitants of the regions around the Mississippi and its confluent waters—in a letter from* L. BRINGIER, *Esq. of Louisiana, to Rev. Elias Cornelius—communicated for this Journal.*

Introductory Remarks.

Through the medium of this Journal, vol. I. pp. 214 and 317, the public have been already favoured with the observations of the Rev. Mr. Cornelius, on some portions of the southern and south western States. At the request of the Editor, facts and statements, derived from other sources, were obtained by Mr. Cornelius; and relating principally to parts of the country on the Mississippi, which that gentleman had not the opportunity of seeing. This was the origin of Mr. Bringier's memoir, which peculiar circumstances have prevented our publishing till now.

Although somewhat immethodical, it abounds so much with interesting statements, that we have thought it better to publish it, with some alterations and omissions, (agreeably to the author's permission communicated with the paper,) rather than to attempt a new digest of the subjects: for Mr. Bringier appears to have contemplated little more than the communication of *materials*, to be wrought into a different form.—EDITOR.

County of Accadia, 20th March, 1818.

The following circumstance will show what influence rafts have on the alluvial soils of such rivers as this.

Earthquakes and Eruptions.

On the sixth day of January, 1812, during the earthquakes* which destroyed New-Madrid, and which were felt two hundred miles around, I happened to be passing in its neighbourhood, where the principal shock took place. The violence of the earthquake having disturbed the earthy strata impending over the subterraneous cavities, existing probably in an extensive bed of wood, highly carbonized, occasioned the whole superior mass to settle. This, press-

I have seen the oil stone for hones and tools, mentioned by Mr. B. as found on the Ouichita—it is no doubt better than those brought from Turkey. I have always heard the same account of the Ouichita, that he gives in regard to its minerals. I never heard of the cinnabar or quicksilver ore, of which he speaks; but there is no doubt at all, of the salt rock abounding on the Arkansas; and of the salt sterilizing the soil, and mixing its crystals through large plains. The large piece of pure iron, weight near three thousand, which he speaks of, was displayed in New-Orleans, and is now, as you know, in New-York; it was found as he describes. I have often heard of the abundance of marble, which he mentions as being on the White river; and I have heard that the same river ran over a bed of green marble for fifty miles. I have no doubt of the granite or primitive mountains, on the Arkansas, and neighborhood.

tion, having surveyed the right bank of the river, on all the parts where the rafts are lodged. Men may pass in many places, but in none without difficulty and danger. The timber rises and falls with the water; is continually shifting; lies in all directions, having large interstices open, and frequently moves in a body, from the weight of the incumbent mass. It is about twenty miles from the upper to the lower extremity of the raft, ten miles only of this is actually closed with timber," pp. 52.

There are other rafts mentioned by Mr. Darby, but none so large. Mr. Darby's book was published in 1818; and Mr. Bringier's visit to the Achafalaya was in 1812. Whether the rafts had actually diminished since this period, or in what way we are to reconcile the accounts, we cannot at present discern; even Mr. Darby's account is however sufficiently wonderful.—*Editor.*

* Several authors have asserted that earthquakes proceed from volcanic causes, but although this may be often true, the earthquake alluded to here, must have had another cause. Time, perhaps, will give us some better ideas as to the origin of these extraordinary phenomena. It is probable, that they are produced, in different instances, by different causes, and that electricity is one of them; the shocks of the earthquake of Louisiana, in 1812, produced emotions and sensations much resembling those of a strong galvanic battery. It will, perhaps, be pertinent to observe, that this earthquake took place after a long succession of very heavy rains, such as had never been seen before in that country.

ing with all its weight upon the water that had filled the lower cavities, occasioned a displacement of this fluid, which forced its passage through, blowing up the earth with loud explosions. It rushed out in all quarters, bringing with it an enormous quantity of carbonized wood, reduced mostly into dust, which was ejected to the height of from ten to fifteen feet, and fell in a black shower, mixed with the sand which its rapid motion had forced along; at the same time, the roaring and whistling produced by the impetuosity of the air escaping from its confinement, seemed to increase the horrible disorder of the trees which every where encountered each other, being blown up, cracking and splitting, and falling by thousands at a time. In the mean time, the surface was sinking, and a black liquid was rising up to the belly of my horse, who stood motionless, struck with a panic of terror.

These occurrences occupied nearly two minutes; the trees, shaken in their foundation, kept falling here and there, and the whole surface of the country remained covered with holes, which, to compare small things with great, resembled so many craters of volcanoes, surrounded with a ring of carbonized wood and sand, which rose to the height of about seven feet.

I had occasion, a few months after, to sound the depth of several of these holes, and found them not to exceed twenty feet; but I must remark the quicksand had washed into them. The country here was formerly perfectly level, and covered with numerous small prairies of various sizes, dispersed through the woods. Now it is covered with slaches (ponds) and sand hills or mounticules, which are found principally where the earth was formerly the lowest; probably because, in such places, the water broke through with more facility.

A circumstance worth noticing, was a tendency to carbonization, that I perceived in all the vegetable substances soaking in the ponds produced by these eruptions. It was about seven months after the event had taken place, that I had occasion to make these remarks, on the spot before mentioned. The same earthquake produced a lake between St. Francis and Little Prairie, distant twenty-seven miles from the Mississippi river. This lake much resembles the Big lake on Red river, inasmuch as the trees are standing upright in all of them, and sunk about thirty feet when the

water is high. They are all evidently modern lakes, whose beds were, not long since, part of the forest.

Fossil Remains of the Mastodon.

On the same voyage, I saw, in New-Madrid, a Mammoth grinder, which had just been found by one Francais Lesieur. Along with it were several other teeth belonging to the same jaw—it was found about three miles below the village, on the banks of the Mississippi, but it was very damp and very soft.* This kind of fossil is frequently met with on the porphyry ridges bordering, in many places, a portion of the grand valley which is included in the state of Missouri.

Between White river and Strawberry river are three parallel porphyry ranges, running circularly from the west to the north east; the three mountains are twenty-eight miles across, and seem to have been above water, when the whole country around was covered by the ocean. The south-west side presents a large undulating valley of basalts, amongst which are some calcareous stones that may be denominated marbles.

At the foot of the before mentioned mountain, was an elephant or mammoth's tooth (or grinder) of an enormous size; it was fully twice as large as the largest I had seen before at Big-Bonelick. A great quantity of these fossils are there gathered in a small compass, and this collection was doubtless occasioned by the appetite which these animals had for the salt. Attracted by the water that oozes in these marshy places, they were evidently mired when they ventured too far in, and of course, the struggles of the last one would sink the bones of his predecessor still deeper. Thus these collections are easily accounted for, although at first, it seems very strange to see these bones accumulated, like those of some of the extinct Indian tribes in the west. The grinder which I discovered, was perfectly preserved in its shape, and converted into a siliceous petrification, representing milk white jasper, variegated with beautiful colours. It was incrusted by a solid block of porphyry, which the destructive hand of time had worn away to such a degree,

* Its weight is mentioned in the text as being, if we could read it correctly, eleven to seven ounces—but this could hardly be the correct meaning.